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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/810,297 | 03/26/2004 | Luigi Tallone | 36030312 US02 | 9276 |

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| EXAMINER | |
|---|---|
| CHIEM, DINH D | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2883 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 04/08/2008 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/810,297 | TALLONE ET AL. | |
| | Examiner | Art Unit | |
| | ERIN D. CHIEM | 2883 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2 and 8-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2,8-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This office action is in response to applicant's remarks filed on December 13, 2007. The examiner finds applicant's argument persuasive, however, with further search and reconsideration of the placement of the "further optical waveguide" with respect to the input optical fiber and the optical component, the examiner will provide new ground(s) of rejection in place of the rejection in the Office Action mailed September 13, 2007.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (US Patent 6,118,915). In the terms of claim 1, Sato discloses a mounting arrangement for at least one optical component in a planar lightwave circuit, the arrangement comprising: a substrate (9), an input optical fiber (8) mounted on said substrate, an output optical waveguide (8) in a given set of planar layers of said substrate, said one optical component (12) is mounted on said substrate to transmit optical radiation from said input optical fiber to said output optical waveguide, and a further optical waveguide (3) is disposed in the same planar layers of said output optical waveguide. The further optical waveguide is interposed between said input optical

fiber and said optical component and wherein said optical component is interposed between said further optical waveguide and said output waveguide.

Regarding claim 8, the isolator (12) is laterally offset to the perpendicular to said input-to-output, the path of radiation is transmission is at angle.

Regarding claims 9-11, and 21-23 at least one optical component comprises an optical isolator and a filter (Fig. 3 and col. 8, lines 22-34).

Regarding claim 17 and 18, the fiber is mounted on a v-groove (10).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 16, 12-14, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Tabuchi (US 5,481,629).

Regarding claims 2 and 16, Sato discloses the invention of claim 1 and 15, however, Sato does not explicitly disclose the substrate 9 is a silicon optical bench. Tabuchi discloses the substrate 1 is made of silicon (Abstract). It would have been obvious to one having ordinary skill in the art to recognize silicon is a commonly used material for a substrate. **The motivation** for providing the optical components on a silicon substrate for silicon is a readily available material that is suitable as a semiconductor component.

Regarding claims 12-14 and 24-26, Sato discloses the invention of claim 1 and 15, however, Sato does not explicitly disclose the at least one component is a ball lens wherein the ball lens is received by a pyramidal hole. Tabuchi discloses the at least one optical component is a ball lens (10a-11e and 11a-11e) mounted on pyramidal hole (6a-6e, 7a-7e). It would have been obvious to one having ordinary skill in the art to recognize a spherical lens is an optical component that would be used in a planar lightwave circuit to guide and optical signal from the input to output path and a pyramidal hole is provided to hold the lens in place. **The motivation** for providing a spherical lens is to improve the beam to be focused from the input to the output.

Claim19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Drake (US 5,999,303).

Sato discloses all the limitations of claim 15, but does not disclose using optical fibers from the same fiber batch for the input and length of fiber on the substrate.

Drake discloses using input and output fibers from the same manufacturing batch having very precise lengths for both lengths of input and output fibers (col. 16, line 3-6) for the purpose of maintaining the same fiber characteristics in an optical system.

Since Sato and Drake are both from the same field of endeavor; the purpose disclosed by Drake would have been recognized in the pertinent art of Sato.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use optical fibers that were drawn from the same batch in implementing on one optical system. **The motivation** for using optical fibers drawn from the

same batch is to maintain the closely similar characteristics of the optical fibers such as having substantially same core index, cladding index, and the same low level of impurities.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view Harpin et al. (US Patent 5,787,214 "Harpin" hereinafter).

Sato discloses all the limitations of claim 15, but does not disclose the end surfaces of the input optical fiber comprise an anti-reflective coating.

Harpin teaches applying a layer of silicon nitride to the end facet of the waveguide for the purpose of reducing backreflection (col. 4, lines 1-4).

Since Sato and Harpin are both from the same field of endeavor; the purpose disclosed by Harpin would have been recognized in the pertinent art of Sato.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply anti-reflective coating to the end facet of the waveguides that are coupled together. **The motivation** for applying an anti-reflective coating is to reduce backreflection as taught by Harpin.

***Response to Arguments***

Applicant's arguments with respect to claims 1-, 8-26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN D. CHIEM whose telephone number is (571)272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erin D Chiem/
Examiner
Art Unit 2883

/Frank G. Font/
Supervisory Primary Examiner
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